

CLAIMS

1. Reactive oxygen-detecting and/or -absorbing compound,  
characterised in that

5 it is constituted by a molecular complex which comprises a  
metal derivative (1)/ligand (2) and which changes colour in  
accordance with the extent of oxidation of the metal and  
which is connected to the surface of a solid support (3) by  
means of a covalent bond.

10

2. Reactive compound according to claim 1,  
characterised in that

the molecular complex is connected to the surface of the  
support by means of a derivative (4) of an organic linking  
15 chain which comprises, on the one hand, a first function or  
grafting function which allows it to be fixed to the support  
and, on the other hand, a second function, or co-ordination  
function, which is suitable for bringing about coupling with  
an associated molecular condensation entity in order to form  
20 the ligand which allows the complexing of the metal  
derivative.

3. Reactive compound according to claim 2,  
characterised in that

25 the ligand comprises a heteroatomic chain which may or may  
not be substituted and which comprises two conjugated imine  
functional groups and in which at least two atoms of nitrogen,  
one of which belongs to a pyridine core or the like, are  
separated by two atoms of carbon.

30

4. Reactive compound according to claim 3,  
characterised in that

the co-ordination function of the organic linking chain is an amine function.

5      5. Reactive compound according to either claim 3 or claim 4, characterised in that the molecular condensation entity is constituted by 2-pyridine carboxaldehyde, or 2-pyridine carboxylic acid or the chloride thereof.

10     6. Reactive compound according to any one of claims 1 to 5, characterised in that the metal derivative is selected from the group formed by CuCl,  $[\text{Cu}(\text{CH}_3\text{CN})_4] [\text{PF}_6]$ ,  $\text{AgNO}_3$ , and  $\text{FeSO}_4$ .

15     7. Reactive compound according to any one of claims 1 to 6, characterised in that the support is an organic polymer support such as polystyrene balls or a co-polymer based on polystyrene, and the grafting function of the organic linking chain is an alkene function.

20     8. Reactive compound according to claim 7, characterised in that the balls which constitute the support are balls of functional polystyrene which have one or more primary amine  
25     functions and/or one or more secondary amine functions.

9. Reactive compound according to any one of claims 1 to 6, characterised in that the support is a mineral support, such as balls of a mineral glass, and the grafting function of the  
30     organic linking chain is a trialkoxysilane function, in particular a trimethoxysilane function.

10. Reactive compound according to claim 9,  
characterised in that  
the organic linking chain is selected from the group formed  
by 3-aminopropyltrimethoxysilane, N-[3-(trimethoxysilyl)-  
5 propyl]ethylenediamine and 3-(2-(2-amino)ethylamino]propyl-  
trimethoxysilane.
11. Reactive compound according to either claim 9 or claim 10,  
characterised in that  
10 the support is constituted by an activated metal oxide such  
as  $\text{TiO}_2$ ,  $\text{ZrO}_2$  or preferably  $\text{SiO}_2$  or  $\text{Al}_2\text{O}_3$ .
12. Method for preparing a reactive compound according to any  
one of claims 9 to 11, in which the support is a mineral  
15 support, characterised in that  
it comprises the following steps:  
- activating the support by means of immersion in an acid  
solution, washing operations, then air-drying,  
- grafting the organic chain to the activated support by  
20 means of immersion in ethanol at ambient temperature,  
- synthesis of the ligand in situ by adding the molecular  
condensation entity to the organic chain previously  
grafted to the support which may or may not have been  
activated at ambient temperature and in an ethanol medium,  
25 and  
- co-ordinating the metal derivative on the ligand by means  
of immersion in a solution of ethanol at ambient  
temperature in an inert atmosphere.
- 30 13. Oxygen-detecting and/or -absorbing device,  
characterised in that  
it comprises a reactive compound according to any one of  
claims 1 to 12.